Xiaodi "Ada" Yuan

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EDUCATION

University of California San Diego September 2023 - Present
Ph.D. in Computer Science

- Advised by Prof. Hao Su

Tsinghua University September 2019 - June 2023
Bachelor's Degree in Computer Science

- Yao Class, Institute for Interdisciplinary Information Sciences (IIIS)
- GPA: 3.97/4.00, rank 3/32

SELECTED UNDERGRADUATE COURSEWORK

- Linear Algebra A+
- Calculus 1, 2 A-, A
- Introduction to Artificial Intelligence A
- Introduction to Computer Science A
- Abstract Algebra A+
- Mathematics for Artificial Intelligence A
- Foundation of Object-Oriented Programming A+
- Theory of Computation A
- Computer Vision A
- Deep Learning A
- Introduction to Robotics A
- Advanced Computer Graphics A
- AI+X (AI Interdisciplinary Research Training) A+
- Physics-Based Simulation A+

RESEARCH EXPERIENCE

Parametric CAD Scan Completion Aug 2021 - Feb 2022
Mentor: Li Yi *Tsinghua University*

- Developed a generalizable point cloud completion method for CAD models by deducing the parametric modeling process from the partial observations.
- Acquired knowledge and skills in 3D computer vision and geometry.

Physical Simulation Projects Mar 2022 - Aug 2022
Mentor: Hao Su *University of California, San Diego*

- **MPM and System Identification**: Implemented a differentiable MPM (Material Point Method) framework with PyTorch. A neural network can be plugged into the framework and optimized using differentiable simulation to estimate the physical properties of objects.
- **SPH and ManiSkill2**: Participated in the ManiSkill2 project, a robotic manipulation benchmark that supports rigid and soft-body tasks. Implemented the SPH (Smoothed-Particle Hydrodynamics) algorithm for the simulation environment of a soft-body manipulation task.

Real-Time Differentiable IPC for Soft-Body Manipulation (Ongoing) Oct 2022 - Present
Mentor: Hao Su, Yin Yang, Tao Du *University of California, San Diego*

- Currently implementing a GPU-accelerated IPC (Incremental Potential Contact) simulator using NVIDIA Warp.

COURSE PROJECTS

RayTracer. Course project of Computer Graphics. A path tracing engine in C++. Code: `https://github.com/Rabbit-Hu/RayTracer/`.

Shanduan: Classical Chinese Sentence Segmentation with BERT. Course project of Deep Learning. Fine-tuned a RoBERTa model to segment classical Chinese sentences without punctuation, and outperformed an existing tool based on CRF. Code: `https://github.com/Rabbit-Hu/shanduan/`.

LANGUAGE SKILL

- **TOEFL**: 109 (Reading 30, Listening 29, Speaking 24, Writing 26)
- **GRE**: 329 + 4.0 (Verbal 159, Quantitative 170, Writing 4.0)

HONORS AND AWARDS

- **The National Scholarship** 2019 - 2020
- **Outstanding Student Leader** | Institute for Interdisciplinary Information Sciences, THU 2021
- **National Olympiad in Informatics (NOI), Silver Medal** 2018